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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,088	07/08/2003	William Yeoh	D/A1667	8691
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PATENT DOCUMENTATION CENTER			RASHID, DAVID	
XEROX CORPORATION			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/615,088	YEOH ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	David P. Rashid	2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 10/19/2007.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-18 is/are pending in the application.
  - 4a) Of the above claim(s) 11-18 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-10 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 08 July 2003 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date <u>7/8/2003</u> .	6) <input type="checkbox"/> Other: _____.

## DETAILED ACTION

All of the examiner's suggestions presented herein below have been assumed for examination purposes, unless otherwise noted.

### *Election/Restrictions*

1. **Claims 11 – 18** are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected **Species II**, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 10/19/2007.
2. Applicant's election with traverse of **claims 1 – 10** in the reply filed on 10/19/2007 is acknowledged. The traversal is on the grounds that claim 11 recites a method of electronic registration using multiple channels, which includes performing an edge detection operation. Neither claim 11 nor claims dependent thereon recite the use of "edge channel detection". This is not found persuasive because the examiner created the brief phrase "edge channel detection" only to condense wordage of the method of electronic registration using multiple channels, which includes performing an edge detection operation as Applicant pointed out. Though the phrase "edge channel detection" may not be entirely satisfactorily, the fact that claims 1 and 11 are non-obvious variants still stands as both claims are directed to separate sub-classes (claim 1 being directed to 382/162 and claim 11 being directed to 382/199).

The requirement is still deemed proper and is therefore made FINAL.

***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign mentioned in the specification: "10".
4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

5. The disclosure is objected to because of the following informalities:
  - (i) paragraph [0029], line 2 contains a grammatical error – suggest changing to "...having the a high average gray..."  
Appropriate correction is required.

***Claim Objections***

6. The following is a quotation of 37 CFR 1.75(a):

The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

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7. **Claims 1 – 10** are objected to under 37 CFR 1.75(a), as failing to conform to particularly point out and distinctly claim the subject matter which application regards as his invention or discovery.

- (i) Claim 1, line 6 appears to contain a grammatical error – suggest changing to “an average chrominance value values for each”
- (ii) Claim 3 is unclear as what exactly is being distinctly claimed when citing “registration channel selects...having an average chrominance value below a threshold chromacity the registration channel” (emphasis added) – suggest changing to “registration channel selects...having an average chrominance value below a threshold chromacity the registration channel”

***Claim Rejections - 35 USC § 101***

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. The USPTO “Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility” (Official Gazette notice of 22 November 2005), Section IV.C, reads as follows:

While abstract ideas, natural phenomena, and laws of nature are not eligible for patenting, methods and products employing abstract ideas, natural phenomena, and laws of nature to perform a real-world function may well be. In evaluating whether a claim meets the requirements of section 101, the claim must be considered as a whole to determine whether it is for a particular application of an abstract idea, natural phenomenon, or law of nature, rather than for the abstract idea, natural phenomenon, or law of nature itself.

For claims including such excluded subject matter to be eligible, the claim must be for a practical application of the abstract idea, law of nature, or natural phenomenon. Diehr, 450 U.S. at 187, 209 USPQ at 8 ("application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent

protection."); Benson, 409 U.S. at 71, 175 USPQ at 676 (rejecting formula claim because it "has no substantial practical application").

To satisfy section 101 requirements, the claim must be for a practical application of the Sec. 101 judicial exception, which can be identified in various ways:

The claimed invention "transforms" an article or physical object to a different state or thing.

The claimed invention otherwise produces a useful, concrete and tangible result, based on the factors discussed below.

**Claims 1 – 9** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. **Claims 1 – 9** recite the mere manipulation of data or an abstract idea, or merely solves a mathematical problem without a limitation to a practical application. A practical application exists if the result of the claimed invention is “useful, concrete and tangible” (with the emphasis on “result”)(Guidelines, section IV.C.2.b). A “useful” result is one that satisfies the utility requirement of section 101, a “concrete” result is one that is “repeatable” or “predictable”, and a “tangible” result is one that is “real”, or “real-world”, as opposed to “abstract” (Guidelines, section IV.C.2.b)). **Claims 1 – 9** merely manipulates data without ever producing a useful, concrete and tangible result. A method comprising steps of “receiving”, “determining”, and “selecting” with a lack of physical structure do not produce a real-world result as required to meet the tangibility requirement.

In order to for the claimed product to produce a “useful, concrete and tangible” result, recitation of one or more of the following elements is suggested:

- The manipulation of data that represents a physical object or activity transformed from outside the computer.
- A physical transformations outside the computer, for example in the form of pre or post computer processing activity.

- A direct recitation of a practical application;

Applicant is also advised to provide a written explanation of how and why the claimed invention (either as currently recited or as amended) produces a useful, concrete and tangible result.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Buchar et al. (US 2002/0126299 A1) in view of Kojima et al. (US 6,345,116 B1).

Regarding **claim 1**, while Buchar discloses a method of automatically detecting registration parameters for a selected backing surface (paragraph 0012), comprising:  
receiving image data (“image data” in paragraph 0020) comprising a representative sample of the backing surface (“backing surface” in paragraphs 0013, 0014), the image data including gray level values (paragraph 0013) in multiple channels (“at least two color sensitive channels” in paragraph 0012) for selected pixel locations along a scanline (paragraph 0013);  
determining an average gray level values for each of the multiple channels (“automatically determining an average gray level...” in paragraph 0012);  
selecting a registration channel (FIG. 4, element 110) based on the average gray level values (paragraph 0034);  
determining a gray level deviation (FIG. 4, element 112) for the registration channel; and

determining a registration parameter (FIG. 4, element 114) based on the average gray level value and the gray level deviation of the registration channel, Buchar does not teach the image data including chrominance values.

Kojima teaches wherein image data (FIG 17, element 1) comprises chrominance values (FIG. 17, element 800; Col. 17, lines 55 – 60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the image data of Buchar to include chrominance values as taught by Kojima to provide “to provide an image processing apparatus capable of reading color images with reduced memory costs, by reduction in data amount by employing monochromatic luminance data or lightness data for a processing part requiring real-time processing at high speed, and performing reduction or compression processing for chrominance image data, or saturation image data and hue image data, which require no high speed data processing.”, Kojima, Col. 21, lines 17 – 23.

Regarding **claim 2**, while Buchar discloses wherein the step of selecting a registration channel selects the gray level channel having a low average gray level value (“lowest average gray level is identified” in paragraph 0034) as the registration channel, Buchar does not teach the image data including chrominance values.

Kojima teaches wherein image data (FIG 17, element 1) comprises chrominance values (FIG. 17, element 800; Col. 17, lines 55 – 60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the image data of Buchar to include chrominance values as taught by Kojima to provide “to provide an image processing apparatus capable of reading color images with reduced memory costs, by reduction in data amount by employing monochromatic luminance data or

lightness data for a processing part requiring real-time processing at high speed, and performing reduction or compression processing for chrominance image data, or saturation image data and hue image data, which require no high speed data processing.”, Kojima, Col. 21, lines 17 – 23.

Regarding **claim 3**, Buchar discloses wherein the step of selecting a registration channel selects a gray level channel having an average gray level value below a threshold gray level (paragraphs 0020, 0043; claim 3) , Buchar does not teach the image data including chrominance values.

Kojima teaches wherein image data (FIG 17, element 1) comprises chrominance values (FIG. 17, element 800; Col. 17, lines 55 – 60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the image data of Buchar to include chrominance values as taught by Kojima to provide “to provide an image processing apparatus capable of reading color images with reduced memory costs, by reduction in data amount by employing monochromatic luminance data or lightness data for a processing part requiring real-time processing at high speed, and performing reduction or compression processing for chrominance image data, or saturation image data and hue image data, which require no high speed data processing.”, Kojima, Col. 21, lines 17 – 23.

Regarding **claim 4**, while Buchar discloses wherein the step of determining a gray level deviation determines the gray level deviation as the difference between the maximum gray level value within the image data corresponding to the registration channel and the minimum gray level value within the image data corresponding to the registration channel (paragraph 0035; equation (2) in paragraph 0036), Buchar does not teach the image data including chrominance values.

Kojima teaches wherein image data (FIG 17, element 1) comprises chrominance values (FIG. 17, element 800; Col. 17, lines 55 – 60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the image data of Buchar to include chrominance values as taught by Kojima to provide “to provide an image processing apparatus capable of reading color images with reduced memory costs, by reduction in data amount by employing monochromatic luminance data or lightness data for a processing part requiring real-time processing at high speed, and performing reduction or compression processing for chrominance image data, or saturation image data and hue image data, which require no high speed data processing.”, Kojima, Col. 21, lines 17 – 23.

Regarding **claim 5**, while Buchar discloses wherein the step of determining a registration parameter comprises:

determining a registration parameter value for a black average register (BAR) as a function of the average gray level value of the registration channel;

determining a registration parameter value for a step change register (SCR) as a function of the gray level deviation of the registration channel; and

determining a registration parameter value for a white average register (WAR) as a function of as both the average gray level value and the gray level deviation of the registration channel (“BAR”, “SCR”, and “WAR” in paragraphs 0024, 0037, 0039; claim 5), Buchar does not teach the image data including chrominance values.

Kojima teaches wherein image data (FIG 17, element 1) comprises chrominance values (FIG. 17, element 800; Col. 17, lines 55 – 60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the image data of Buchar to include chrominance values as taught by Kojima to provide “to provide an image processing apparatus capable of reading color images with reduced memory costs, by reduction in data amount by employing monochromatic luminance data or lightness data for a processing part requiring real-time processing at high speed, and performing reduction or compression processing for chrominance image data, or saturation image data and hue image data, which require no high speed data processing.”, Kojima, Col. 21, lines 17 – 23.

Regarding **claim 6**, while Buchar discloses wherein the black average register (BAR) is set to equal the average gray level value of the registration channel (equation (3) in paragraph 0037), Buchar does not teach the image data including chrominance values.

Kojima teaches wherein image data (FIG 17, element 1) comprises chrominance values (FIG. 17, element 800; Col. 17, lines 55 – 60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the image data of Buchar to include chrominance values as taught by Kojima to provide “to provide an image processing apparatus capable of reading color images with reduced memory costs, by reduction in data amount by employing monochromatic luminance data or lightness data for a processing part requiring real-time processing at high speed, and performing reduction or compression processing for chrominance image data, or saturation image data and hue image data, which require no high speed data processing.”, Kojima, Col. 21, lines 17 – 23.

Regarding **claim 7**, while Buchar discloses wherein the step change register (SCR) is set to equal the gray level deviation for the registration channel (equation (4) in paragraph 0037), Buchar does not teach the image data including chrominance values.

Kojima teaches wherein image data (FIG 17, element 1) comprises chrominance values (FIG. 17, element 800; Col. 17, lines 55 – 60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the image data of Buchar to include chrominance values as taught by Kojima to provide “to provide an image processing apparatus capable of reading color images with reduced memory costs, by reduction in data amount by employing monochromatic luminance data or lightness data for a processing part requiring real-time processing at high speed, and performing reduction or compression processing for chrominance image data, or saturation image data and hue image data, which require no high speed data processing.”, Kojima, Col. 21, lines 17 – 23.

Regarding **claim 8**, while Buchar discloses wherein the white change register (WAR) is set to equal to sum of average gray level value and gray level deviation of the registration channel (equation (5) in paragraph 0037), Buchar does not teach the image data including chrominance values.

Kojima teaches wherein image data (FIG 17, element 1) comprises chrominance values (FIG. 17, element 800; Col. 17, lines 55 – 60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the image data of Buchar to include chrominance values as taught by Kojima to provide “to provide an image processing apparatus capable of reading color images with reduced memory costs, by reduction in data amount by employing monochromatic luminance data or lightness data for a processing part requiring real-time processing at high speed, and performing reduction or compression processing for chrominance image data, or saturation image data and hue image data, which require no high speed data processing.”, Kojima, Col. 21, lines 17 – 23.

Regarding **claim 9**, while Buchar discloses wherein the step of determining a registration parameter generates a gray level deviation threshold ( $\delta_1, \delta_2, \delta_3$  in equations (3), (4), (5) in paragraph 0037; paragraph 0038) based on the gray level deviation for the registration channel, Buchar does not teach the image data including chrominance values.

Kojima teaches wherein image data (FIG 17, element 1) comprises chrominance values (FIG. 17, element 800; Col. 17, lines 55 – 60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the image data of Buchar to include chrominance values as taught by Kojima to provide “to provide an image processing apparatus capable of reading color images with reduced memory costs, by reduction in data amount by employing monochromatic luminance data or lightness data for a processing part requiring real-time processing at high speed, and performing reduction or compression processing for chrominance image data, or saturation image data and hue image data, which require no high speed data processing.”, Kojima, Col. 21, lines 17 – 23.

Regarding **claim 10**, while Buchar discloses wherein the backing surface comprises a ski (FIG. 2), the ski being adapted to be removably attached to a document handler, Buchar does not teach the image data including chrominance values.

Kojima teaches wherein image data (FIG 17, element 1) comprises chrominance values (FIG. 17, element 800; Col. 17, lines 55 – 60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the image data of Buchar to include chrominance values as taught by Kojima to provide “to provide an image processing apparatus capable of reading color images with reduced memory costs, by reduction in data amount by employing monochromatic luminance data or

lightness data for a processing part requiring real-time processing at high speed, and performing reduction or compression processing for chrominance image data, or saturation image data and hue image data, which require no high speed data processing.", Kojima, Col. 21, lines 17 – 23.

***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David P. Rashid whose telephone number is (571) 270-1578. The examiner can normally be reached Monday - Friday 8:30 - 17:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571) 272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



VIKKRAM BALI  
PRIMARY EXAMINER

/David P. Rashid/  
Examiner, Art Unit 2624

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Examiner

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